

# THE MARYLAND STATE HORTICULTURAL DEPARTMENT

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## Some Suggestions in regard to Peach Yellows.

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The disease known as Peach Yellows has existed in this country for more than one hundred years. It has gradually spread over the eastern part of the United States, until practi-



*Peach tree in last stages of yellows, After Dr. Erwin F. Smith. Department of Agriculture, Washington, D. C.*

cally every peach growing section of importance has been visited by it. The real cause of this disease is not known

but every observing peach grower recognizes its destructive nature and its ability to spread from tree to tree and from orchard to orchard. If a tree is attacked by the yellows it soon becomes not only worthless from a commercial standpoint, but a source of contagion for the surrounding trees. There are several symptoms by which the yellows may be recognized. The first unmistakable sign is the premature ripening of the fruit. Such fruit is usually highly colored; sometimes the color is uniform over the surface but more often it occurs in spots or blotches. The flesh of a diseased peach is usually filled with dark red streaks extending out from the pit. Generally the premature peaches occur, during the first stages of the disease, on one branch of the tree only, while the fruit on the other branches is green and hard. This is especially true during the first year of prematuring. The second season premature fruit may appear in all parts of the tree. The difference in time between the premature and the normal ripening varies from a few days to several weeks. The next indication of the yellows is the presence of willowy shoots. The foliage of these shoots is small, somewhat resembling willow leaves, and is usually yellowish in color. These shoots may put out from any part of the tree, from the base of the trunk to the top of the tallest branch, and when they first appear they are usually few in number, often but a single one. With the progress of the disease the branches gradually die, while the shoots increase in number, often occurring in tufts or bunches as shown in the cut on the first page. After a tree has reached this latter stage, which it does in from three to five years, it soon dies. The yellows has been known to attack trees of all ages from a few months old up to thirty years or more. It is sometimes very destructive in young orchards before they have come into bearing, and in such instance the only reliable symptom is the presence of willowy shoots.

In some orchards one and two years old, we have found as high as ten per cent of the trees diseased. While the real cause of the yellows is not known, it is an established fact that the disease is a very dangerous one, since the trees affected are rendered worthless and the disease is communicated from tree to tree. Just how the disease is spread is unknown. There are some indications that it is spread by

the bees during the blossoming season, but this is a difficult point to determine, since it has been found that trees may have the yellows for some time before any visible symptom appears. For example buds taken from a diseased tree several months before it shows any symptoms of yellows and budded into a healthy tree will induce the yellows in the healthy tree in a short time, showing that the tree from which the buds were taken was diseased before any external symptoms appeared. In whatever way this disease is carried it is certain that it is spread at times very rapidly. At other times it goes more slowly, as if it depended upon weather conditions or some other external factor.

In addition to the spread of the disease from tree to tree, it is often propagated through the bud and probably through the pit. In the later stages many of the seeds fail to sprout, but in the earlier stages the seeds will germinate and the stock thus obtained will be tainted with the disease. Great care should be exercised, therefore, in growing and in purchasing nursery stock, to avoid obtaining tainted trees. There are some things that prevent absolute certainty in deciding upon the healthfulness of trees from which pits and buds are obtained, since as already shown trees may sometimes be diseased before any symptoms are visible. If, however, trees from which pits or buds have been obtained for the propagation of nursery stock show symptoms of the yellows within a short time after the pits or buds have been taken from them the nursery stock thus produced should be discarded without hesitation.

Many efforts have been made to restore trees that have become diseased with the yellows, but so far as known all such efforts have been in vain. In some instances temporary relief seems to have been given the diseased trees by the application of certain plant foods, shown in a deeper green in the foliage, but in no instance known to the writer have the yellows symptoms disappeared, nor has the life of the tree been appreciably prolonged. Again as the yellows often appears in a single branch of a tree some growers have tried to remove the disease by breaking off the willowy shoots or even by cutting away the whole branch or limb showing the yellows symptoms: but such efforts have also been useless since the disease sooner or later appears in the rest of the tree. In short no remedy for the peach yellows has yet

been made known. The only satisfactory method by which an orchard may be made free from this dangerous disease consists in either grubbing out or cutting down the affected trees, this should be done as soon as the fruit begins to premature and the more closely the diseased trees are pulled out the smaller will be the number of trees destroyed by the yellows and hence the longer the orchard will last. In removing diseased trees the most satisfactory method consists in pulling out and burning the affected trees root and branch. It has been the practice with some growers to cut off the tops of the diseased trees as soon as the yellows appears, and to pull the stumps at a more convenient season. This latter method is satisfactory providing the stumps are not neglected and allowed to produce yellows shoots. In some instances growers have mistaken yellow foliage for a symptom of the yellows. It must be remembered however that a perfectly green tree may have the yellows in its first stages while a yellow tree may be made yellow because of some other disease, by starvation or by the action of some insect. Trees affected by these troubles may almost always be cured if treated in time, and when the trees have been restored by proper treatment the remedies used have been mistaken, by some, for cures for the yellows. Great progress has been made during the past two years in freeing our state from the yellows, and if every grower continues to do his duty the time is not far distant when the number of yellows trees will be reduced to a minimum. In conclusion it should be remembered that an orchard is not safe as long as it contains a single yellows tree, and this is the best season to detect the disease in its early stages, since the premature fruit is now appearing. All such trees should be distinctly marked so that they can be destroyed at an early date, providing time does not admit of their immediate removal.

As soon as the premature peaches are removed the tree often shows no further sign of the yellows until the following season and in the meantime the disease is spreading, if the tree is allowed to remain. Hence no pains should be spared to remove every affected tree as soon as the yellows appears.